REMARKS/ARGUMENTS

Claims 1-35 were previously presented for examination. In the present application, claim 11 stands rejected under 35 U.S.C. 112 as failing to comply with the written description requirement. Claims 1, 3-8, 12-14, and 23 stand rejected under 35 U.S.C. 102(b) as being anticipated by Ramsay et al. (U.S. Patent No. 4,757,374). Claims 2, 9, 10, and 15-21 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Ramsay et al. in view of Treiber (U.S. Patent No. 6,359,676). Claims 22, 24, 25, 27-30, and 33-35 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Ramsay et al. in view of Gould et al. (U.S. Patent No. 3,824,336). Claim 26 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Ramsay et al. in view of Gould et al., in further view of Foung et al. (U.S. Patent No. 5,249,056). Claims 31 and 32 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Ramsay et al. in view of Gould et al., in further view of Treiber.

In addition, the Applicant advises that an office action has been received in related application serial number 10/637,744, reciting claims 1, 2, 7-10, 14-19, and 21 as rejected under 35 U.S.C. 102(b) as being anticipated by Kriz et al. (U.S. Patent No. 4,754,334); claims 3, 5, and 6 as rejected under 35 U.S.C. 103(a) over Kriz et al. and further in view of Tsushima et al. (U.S. Patent No. 5,049,927); claims 4, 11, and 22 as rejected under 35 U.S.C. 103(a) over Kriz et al.; claims 12, 13, and 20 as rejected under 35 U.S.C. 103(a) Kriz et al. and further in view of Lippey et al. (U.S. Patent No. 6,248,448); and claim 23 as rejected under 35 U.S.C. 103(a) over Kriz et al. and further in view of Bril et al. (U.S. Patent No. 5,841,418).

A related European Patent Application is also under examination and which has yielded an office action against pending claims therein citing the following eight references as "particularly relevant if taken alone:"

JP60-103791; EP0980021; DE4211128; WO97/21144; US4827434; US4688104; US4305089 and US4975779. These cited reference have been made of record by a previous Supplemental Information Disclosure Statement that has not yet been acknowledged.

By this amendment, Paragraph [0001] of the Specification has been amended. A further supplemental Application Data Sheet may be submitted as information about related patent applications becomes available.

By this amendment, claims 1-6, 8-12, 14, 16-20, 24, 29 and 31 have been amended. Claims 7, 22, 25, 28 and 34 are herewith canceled without prejudice to further prosecution. Thirty claims remain pending.

By way of background, this invention is directed to a new type of image transfer technology suitable for registering digital image information on movie film in a form and quality suitable for theater-quality presentations. Previous technology involved writing digital information directly to film by way of a modulated laser beam or composite laser beams scanning information pixel by pixel, line by line and frame by frame or using color wheels or CRTs to present information from raster scanning or vector driven image sources.

The current technology employs related static images presented on an electronically addressable flat panel display, and it makes it possible to capture high resolution, high contrast images to film on a frame by frame basis from a source that is otherwise not capable of presenting any single image of contrast and color that matches the capability of the film emulsion. This technology is not to be confused with film-to-video transfer techniques, including film-to-digital video, wherein a projected film image is video recorded. Nor is the present invention to be confused with configurations purportedly suggesting that images from a frame of film are transferred optically, one complete frame at a time, to a target film as a corresponding image, as in the cited primary prior art reference of Ramsay et al. Ramsay et al. does not teach the combination of an electronically addressable flat panel display as a source of related still images to be presented to a single frame of film, with aberration correction to register a final image on film with final characteristics that cannot be displayed by the flat panel display. Nor does it teach other notable features herein claimed, particularly as now amended, including spatial dithering.

The present invention employs elements including an electronically addressable flat panel display as a source of output for a digitally originated image instantiated as a sequence of static images on a focal plane that is illuminated by one of a selection of possible light

sources. The plurality of images on the focal plane of the display are presented in such a manner as to produce high quality, high contrast and high integrity color frames with low aberrational artifacts caused by the inherent misalignment of the flat panel source and the optical aperture structure of the recording film camera. This technology is suited to the high demands of a large screen in a public theater, as well as the needs to produce a tangible archival copy of the digitally originated content for which the assignee of this invention, Pixar, is well known. To emphasize the features of the invention, the claims emphasize the elements which yield the desired outcome. An important feature of the invention as herein claimed is the use of an electronic flat panel display device that is used to present a plurality of static images to a single frame of the film so as to reproduce with a color and a contrast ratio capability beyond the native capability of the flat panel display. Reference is made to paragraphs [0030] though [0038] of the present specification for a discussion of the feature now more clearly claimed.

Other important features are the alignment mechanism, more specifically the X-Y-Z gimbal mechanism, which makes it possible to achieve desired alignment in multiple axes to overcome the problem of off-axis aberration characteristic of prior art transfer processes.

The Applicants submit that the configuration as claimed represents a departure from the structures and methods disclosed in the prior art. Heretofore the ability of a flat panel display combination with the other elements including the illumination source, which can serve a gating function, and the alignment mechanism, to produce on film an image not otherwise achievable from an electronically addressable flat panel display, such as high contrast, high resolution and true color, that is adequate in intensity and in color, as well as resolution, despite the limitations of the source display, was evidently not fully appreciated. The display of a plurality of images to a single frame of the film media is such an enabling feature. This is a form of temporal dithering. The Applicants submit that the cited art of record fails to supply that appreciation.

In addition, the concept of spatial dithering is disclosed and claimed, which is a feature not heretofore found in this combination, particularly since the concept is new and the combination is necessarily new.

Some art in this field relates to light modulation. It is not to be confused with the presentation of static images on a flat panel display. That is not light modulation as understood in the art. In fact, light modulation techniques are inferior to the techniques disclosed herein. Older CRT raster and vector scanning techniques to phosphor are also clearly distinguishable for similar reasons.

Therefore it is submitted that the claims, particularly as amended to further emphasize the novel and nonobvious features, are deserving of patentability. The Examiner is therefore invited to revisit these claims with these clarifications in mind and to note the distinguishing features.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at (650) 326-2400.

Respectfully submitted,

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